





- **8-29.** At 3:25 p.m., two trains left Kalamazoo, Michigan. One train traveled westward at a constant rate of 82 miles per hour, while the other traveled eastward at a constant rate of 66 miles per hour. If they are now 111 miles apart, what time is it now? Write and solve an equation (or system of equations) to answer this question. [Homework Help](#) 

- **8-30.** Remember that a square is a rectangle with four equal sides. [Homework Help](#) 
 - a. If a square has an area of 81 square units, how long is each side?
 - b. Find the length of the side of a square with area 225 square units.
 - c. Find the length of the side of a square with area 10 square units.
 - d. Find the area of a square with side 11 units.

- **8-31.** Factor the following quadratic expressions, if possible. [Homework Help](#) 
 - a. $k^2 - 12k + 20$
 - b. $6x^2 + 17x - 14$
 - c. $x^2 - 8x + 16$
 - d. $9m^2 - 1$
 - e. Parts (a) through (c) are trinomials while part (d) is a binomial, yet they are all quadratics. What makes each of them a quadratic?

- **8-33.** Solve each equation below for x . Check each solution. [Homework Help](#) 

a. $2x - 10 = 0$

b. $x + 6 = 0$

c. $(2x - 10)(x + 6) = 0$

d. $4x + 1 = 0$

e. $x - 8 = 0$

f. $(4x + 1)(x - 8) = 0$